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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/535,684

05/19/2005

Jeffrey Powell

05-409

7931

20306

7590

12/10/2008

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EXAMINER

NGO, HUNG V

ART UNIT

PAPER NUMBER

2831

MAIL DATE

DELIVERY MODE

12/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/535,684	Applicant(s) POWELL ET AL.	
	Examiner Hung V. Ngo	Art Unit 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 6, 8-22 rejected under 35 U.S.C. 103(a) as being unpatentable over Choon et al (US 5,608,188) in view of Miska (US 6,901,660).

Re claim 1, Choon et al disclose a package (101) for a high frequency electrical circuit (201) comprising a cavity formed within a material for containment of the electrical circuit (Fig 1), wherein the package include a material extending into the cavity the material extending into the cavity having a conductive region (col. 2, lines 45-55), the conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (functioned as claimed).

Re claim 5, wherein the material having the at least one conductive surface takes the form of a vane (Fig 1).

Re claim 6, wherein at least one region of the conductive material is arranged to have a specific resistance substantially similar to that of a predicted electromagnetic field that will be present when the cavity is in use (col. 2, lines 45-55).

Re claim 8, wherein the package is designed to house circuitry (201) operative in at least one of the milliwave region in compartment (111) and submilliwave region in compartment (113).

Re claim 9 wherein the material extending into the cavity is mounted on a removable portion of the package (Fig 1).

Re claim 10, wherein the material extending into the cavity is mounted such that it is substantially normal to the surface (Fig 1)

Re claim 11, wherein the at least one conductive surface is mounted in a substantially symmetric fashion within the cavity in relation to a pair of opposing walls of the package (Fig 1).

Re claim 12, wherein the material extending into the cavity is substantially planar (Fig 1).

Re claim 15, a vane for suppressing cavity mode radiation and suitable for mounting within a package for a high frequency electrical circuit, the vane comprising at least in part a layer of conductive material (103) (col. 2, lines 45-55), the conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (abstract).

Re claim 16, wherein the vane comprises a substrate upon which is arranged the conductive material layer (Fig 1).

Re claim 17, wherein the vane is mounted to an inner surface of the package by being affixed substantially along an edge of the vane (Fig 1).

Re claim 18, a high frequency electrical circuit mounted within a cavity (111, 113) in a package, wherein the cavity has an inner surface on which is positioned a material having a conductive surface (103) extending into the cavity, the conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (abstract).

Re claim 19, a method of manufacturing a package (101) for a high frequency electrical circuit (201), comprising positioning a conductive surface (103) on an inner surface of the package, the conductive surface extending into the package (Fig 1).

Re claim 20, wherein the conductivity of the conductive surface is chosen by one of: simulation of expected electrical properties (shielding property) of circuitry within the package, and a trial and error approach (col. 2, lines 45-55).

Re claim 22, a wherein the vane is mounted to an inner surface of the package by being affixed within a slot (407, 409) in the inner surface.

The teaching as discussed above does not disclose the conductive material such as nichrome or carbon being adapted to partially absorbent to electromagnetic radiation (re claims 1, 13, 14, 19). Miska teaches the use of nichrome or carbon to prevent oxidation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use nichrome or carbon for the conductive material of Choon et al for the purpose of preventing oxidation and nichrome and carbon would inherently absorb electromagnetic radiation.

The teaching as discussed above does not disclose at least one conductive surface is substantially cylindrical (re claim 21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the conductive surface of Choon et al by employing cylindrical surface for intended use, since more than a mere change of form is necessary for patentability. In re Span-Deck Inc. v. Fab-Con, Inc. (CA 8, 1982) 215 USPQ 835.

Claims 1-20, 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benzoni (US 5,416,668) in view of Miska (US 6,901,660)

Re claim 1, Benzoni disclose a package (20, 24) for a high frequency electrical circuit (22) comprising a cavity (36) formed within a material for containment of the electrical circuit, wherein the package additionally comprises of a material having at least one surface (52) extending into the cavity, the at least one surface having a conductive material (col. 3 lines 29-31), the conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (abstract).

Re claim 2, wherein the at least one conductive surface comprises a layered structure with a first layer comprising a substrate (col. 2, line 26) and a second layer comprising a conductive material (col. 3, lines 29).

Re claim 3, wherein the substrate comprises a material chosen from alumina, quartz, plastic, glass and cardboard (col. 2, line 39).

Re claim 4, wherein the substrate comprises a dielectric occupying a substantial region of the cavity (Fig 1).

Re claim 5, wherein the material having the at least one conductive surface takes the form of a vane (Fig 1).

Re claim 6, wherein at least one region of the conductive material is arranged to have a specific resistance (col. 3, line 53) substantially similar to the impedance a predicted electromagnetic field that will be present when the cavity is in use.

Re claim 7, wherein the conductive material has conductivity properties different to that of other parts of the cavity (col. 3, line 53)

Re claim 8, wherein the package is designed to house circuitry (22) operative in at least one of the milliwave region in compartment and submilliwave region in the other compartment (Fig 1).

Re claim 9 wherein the material extended into the cavity is mounted on a removable portion of the package (Fig 1).

Re claim 10, wherein the material extended into the cavity is mounted such that it is substantially normal to the surface (Fig 1)

Re claim 11, wherein the at least one conductive surface is mounted in a substantially symmetric fashion within the cavity in relation to a pair of opposing walls of the package (Fig 1).

Re claim 12, wherein the material extended into the cavity is substantially planar (Fig 1).

Re claim 15, a vane for suppressing cavity mode radiation and suitable for mounting within a package (20, 24) for a high frequency electrical circuit, the vane comprising at least in part a layer of conductive material (52) (col. 3, line 29), the conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (abstract).

Re claim 16, wherein the vane comprises a substrate upon which is arranged the conductive material layer (Fig 1).

Re claim 17, wherein the vane is mounted to an inner surface of the package by being affixed substantially along an edge of the vane (Fig 1).

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Re claim 18, a high frequency electrical circuit mounted within a cavity (36) in a package, wherein the cavity has an inner surface on which is positioned a material having a conductive surface (52)(col. 3, line 29) extending into the cavity, the conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (abstract).

Re claim 19, a method of manufacturing a package (20, 24) for a high frequency electrical circuit (22), comprising positioning a material having a conductive region (52)(col. 3, line 29) on an inner surface of the package, the conductive surface extending into the package (Fig 1).

Re claim 20, wherein the conductivity of the conductive region is chosen by one of: simulation of expected electrical properties of circuitry within the package, and a trial and error approach (col. 3, lines 29-40).

Re claim 23, wherein the surface having thereupon the conductive material resides in a slot (48, 50) located in a dielectric material in the cavity.

Re claim 24, wherein the conductive material resides in a hole (48, 50) located in a dielectric material cavity.

Re claim 25, wherein the hole has a cylindrical form (Fig 1).

Re claim 27, wherein the substrate has a surface perpendicular to at least one wall of the package, the perpendicular surface having thereupon the conductive material (Fig 1).

The teaching as discussed above does not disclose the conductive material such as nichrome or carbon being adapted to partially absorbent to electromagnetic radiation

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(re claims 1, 13, 14, 19). Miska teaches the use of nichrome or carbon to prevent oxidation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use nichrome or carbon for the conductive material of Benzoni for the purpose of preventing oxidation and nichrome and carbon would inherently absorb electromagnetic radiation.

The teaching as discussed above does not disclose the conductive material made of ink (re claim 26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use ink for the conductive material of Benzoni for intended use, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claims 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benzoni (US 5,416,668) in view of Miska (US 6,901,660) and Henry (US 5,098,735).

Re claim 28, Benzoni discloses a package (20, 24) for a high frequency electrical circuit (22) comprising a cavity (36) formed within a material for containment of the electrical circuit, wherein the package additionally comprises of a material having at least one surface (52) extending into the cavity, the at least one surface having a conductive material (col. 3 lines 29-31), the conductivity thereof being adapted to be at least partially absorbent to electromagnetic radiation (abstract).

Re claim 29, wherein the at least one conductive surface comprises a layered structure with a first layer comprising a substrate (col. 2, line 26) and a second layer comprising a conductive material (col. 3, lines 29).

Re claim 30, wherein the substrate comprises a dielectric occupying a substantial region of the cavity (Fig 1).

Re claim 31, wherein the material having the at least one conductive surface takes the form of a vane (Fig 1).

Re claim 32, wherein the region having thereupon the conductive material resides in a slot located in a dielectric material in the cavity (Fig 1).

Re claim 33, wherein the conductive material resides in a hole located in a dielectric material in the cavity (Fig 1).

The teaching as discussed above does not disclose the conductive material such as nichrome or carbon being adapted to partially absorbent to electromagnetic radiation (re claim 28). Miska teaches the use of nichrome or carbon to prevent oxidation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use nichrome or carbon for the conductive material of Benzoni for the purpose of preventing oxidation and nichrome and carbon would inherently absorb electromagnetic radiation.

The teaching as discussed above does not disclose the conductive region having a resistivity between 10-1K ohm/square (re claim 28). Henry teaches the use of a conductive region having a resistivity between 10-1K ohm/square for shielding microwave radiation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the conductive region with resistivity between 10-1k with the structure of the modified Benzoni for the purpose of shielding microwave radiation.

Response to Arguments

Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

The finality of the rejection of the last Office action is withdrawn.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung V. Ngo whose telephone number is (571) 272-1979. The examiner can normally be reached on Monday to Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2800 EXT 31. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung V Ngo/
Primary Examiner, Art Unit 2831